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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/560,811	10/12/2006	Hiroshi Hoshigami	2005_1961A	5590
513 7590 11/24/2009 WENDEROTH, LIND & PONACK, L.L.P. 1030 15th Street, N.W., Suite 400 East Washington, DC 20005-1503				
EXAMINER				
CLAWSON, STEPHEN J				
ART UNIT		PAPER NUMBER		
2461				
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/560,811

**Applicant(s)**

HOSHIGAMI ET AL.

**Examiner**

STEPHEN J. CLAWSON

**Art Unit**

2461

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 10/6/2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 5-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 5-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/CD)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

Applicant filed an RCE on October 6, 2009. Claims 5-6 have been amended.

#### *Response to Arguments*

1. Applicant's arguments filed 10/6/2009 have been fully considered but they are not persuasive.

Regarding claim 5, Applicant argues that Shea in view of Spruyt fails to disclose or suggest all the features now recited in independent claim 5, as amended. Examiner disagrees. Specifically, Applicant argues that 'Shea discloses controlling amplitude of a pilot tone signal but fails to disclose or suggest controlling electric powers of one or more signals other than the reference signal (i.e. pilot tone signal).'

Applicant has both misquoted and misinterpreted Shea. While Applicant is correct in stating that 'Shea discloses controlling the amplitude of a pilot tone signal (See col. 4, lines 66-col. 5, line 11)', Applicant draws the wrong conclusion by stating that Shea '...fails to disclose or suggest controlling electric powers of one or more signals other than the reference signal.' On the contrary, Shea explicitly discloses controlling the 'electric powers' of signals (See Shea col. 5, lines 6-8) across a spread spectrum (See Shea col. 1, line 14) That is the pilot tone's power level is varied and this directly affects the power level of the return communications link. (See Shea col. 5, lines 6-8) Stated another way the pilot tone is used as a control signal that both provides useful control information as well as the desired power level of the return communications link. (See Shea col. 3, lines 31-32) The spread spectrum signal as

the name implies is spread across many frequencies and, therefore, Shea does disclose controlling the powers of one or more frequency signals other than the pilot signal. This power control scheme is well known in the art of communications.

***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 6 and 8 are rejected under 35 U.S.C. 112, second paragraph, as failing to set forth the subject matter which applicant(s) regard as their invention.

Regarding claims 5-8, Applicant claims in claim 5, line 21, '...a memory for storing correspondence relationships between...' In order to use the word 'between', two items must be compared but Applicant proceeds to only mention one.

Regarding claims 6 and 8, Applicant claims in claim 6, line 2, '...said memory stores lengths of said common cable...' Examiner is unsure of how a common cable (one) can have multiple lengths simultaneously.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 5 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shea (5,809,061) and further in view of Nakayasu (Pub. No. 2001/0048666).

Regarding claim 5, Shea discloses a communication system comprising a first apparatus and a second apparatus in which a plurality of frequency signals are communicated between said first apparatus and said second apparatus, said first apparatus comprising:

a multiplexing means for multiplexing a plurality of signals which are different in frequency from each other, **(See Shea col. 4, lines 21-22; Shea discloses multiplexed signals covering a plurality of frequencies. Fig. 3 shows multiplexed information using CDMA modulated information covering a plurality of frequencies.)** and for transmitting at least one multiplexed signal to said second apparatus; and **(See Shea fig. 2; Fig. 2 shows transmitting a signal from a base station to a mobile station (second apparatus).)**

a transmission-sided reference frequency signal level detecting means for detecting electric power of a reference signal **(See Shea col. 4, line 66 – col. 5 line 11; The amplitude of a pilot tone is detected and used to adjust gain.)** among the plurality of signals before multiplexing by said multiplexing means; and said second apparatus comprising: **(See Shea col. 4, lines 21-22; Shea discloses multiplexed signals covering a plurality of frequencies. Fig. 3 shows multiplexed information using CDMA modulated information covering a plurality of frequencies.)**

a separating means for separating the reference signal from the at least one multiplexed

signal which is received from said first apparatus; and **(See Shea fig. 1; Fig. 1 shows a mobile station receiver "14" that separates the pilot tone from the channel using a filter.)**

a reception-sided reference frequency signal level detecting means for detecting electric power of the reference signal which is separated by said separating means, wherein said communication system further comprising:

a first signal level control means for controlling electric power of the reference signal based on a comparison between a result detected by said transmission-sided reference frequency signal level detecting means and a result detected by said reception-sided reference frequency signal level detecting means. **(See Shea col. 4, line 66 – col. 5 line 11; fig. 1; The amplitude of a pilot tone is detected and used to adjust gain or power level of the return link (frequencies). This pilot tone provides for continuous adjustment (i.e. a feedback loop) based upon the signal received at the base station from the mobile station (i.e. the difference between the expected or needed and the received).)**

a memory for storing correspondence relationships between information related to loss amounts of said common cable based on the comparison and correction values to control electric powers of one or more signals other than the reference signal, wherein the correction values depend on each frequency of the one or more signals; and **(See Shea col. 3, lines 31-33 and 41-46; Amplitude of the forward channel or pilot tone signal (i.e. reference signal) is used to control the return channel transmit level (i.e. correction values) based on the experienced fading (i.e. loss**

**amounts) on the communications link (i.e. common cable) based on the comparison (i.e. variation in level) and corrective values (i.e. amplitude change))**

a second signal level control means for controlling electric powers of one or more signals other than the reference signal using the correction values stored in said memory based on the comparison. **(See Shea col. 3, lines 31-33 and 41-46; Amplitude of the forward channel or pilot tone signal (i.e. reference signal) is used to control the return channel transmit level (i.e. correction values) based on the experienced fading (i.e. loss amounts) on the communications link (i.e. common cable) based on the comparison (i.e. variation in level) and corrective values (i.e. amplitude change) Essentially, the amplitude of the tone frequency is measured and varied and the other frequency channels are varied to match (i.e. second signal level control means))**

Although Shea does disclose the gain (or power) adjusting scheme used in wireless CDMA, Shea does not explicitly disclose wherein the first apparatus and the second apparatus communicate via a common cable. However, Nakayasu does disclose wherein the first apparatus and the second apparatus communicate via a common cable (using CDMA). **(See Nakayasu para. 15, lines 1-4)** Therefore it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to modify the system of Shea to include the teaching of a wired implementation of Nakayasu with the motivation being to increase the speed of the link while at the same time decreasing the amount errors or loss and thus increase the efficiency of the link.

Regarding claim 7, Shea discloses the communication system of claim 5, wherein

said communication system corresponds to a wireless base station system;

said first apparatus corresponds to an indoor unit; **(See Shea fig. 1; Fig. 1 shows a base station transmitter that may be located indoors or outdoors.)**

said second apparatus corresponds to an outdoor unit; and **(See Shea fig. 1; Fig. 1 shows a mobile station receiver that may be located indoors or outdoors.)**

said reference signal corresponds to a signal of a transmission system. **(See Shea col. 4 lines 62-63; A pilot tone signal is used as a reference signal in transmission system.)**

6. Claims 6 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shea (5,809,061), Nakayasu (2001/0048666), and further in view of Jonsson (2005/0143112).

Regarding claim 6, the combination discloses the communication system of claim 5, wherein

Said memory stores information related to loss amounts of said common cable based on the comparison; and **(Memory or buffers or cache or registers would have to be used.)**



Said second level control means, and reads out the correction values stored in said memory. **(See Shea col. 3, lines 31-33 and 41-46; Amplitude of the forward channel or pilot tone signal (i.e. reference signal) is used to control the return channel transmit level (i.e. correction values) based on the experienced fading (i.e. loss amounts) on the communications link (i.e. common cable) based on the comparison (i.e. variation in level) and corrective values (i.e. amplitude change) Essentially, the amplitude of the tone frequency is measured and varied and the other frequency channels are varied to match (i.e. second signal level control means))**

Shea briefly mentions fading **(See Shea col. 8, line 6)** but does not expound on the subject. Shea does not explicitly disclose wherein:

lengths of said common cable as the  
judges a length of said common cable based on the comparison based on the length.

However, Jonsson does disclose  
lengths of said common cable as the  
judges a length of said common cable based on the comparison based on the length. **(See Jonsson para. 3, lines 6-8; The power of a signal is decreased with increasing propagation distance (i.e. length or communication channel (or common cable) and signal power varying to due to fading (i.e. loss amounts) in the propagation channel (or common cable))** Therefore it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to modify the

disclosure of Shea to include the explanations of fading and the effect of distance on power loss of Jonsson with the motivation being to more effectively control power of a transmitter and receiver and thus save power while at the same time creating a more robust and faster link between the devices.

Regarding claim 8, the combination discloses the communication system of claim 6, wherein:

said communication system corresponds to a wireless base station system;

said first apparatus corresponds to an indoor unit; **(See Shea fig. 1; Fig. 1 shows a base station transmitter that may be located indoors or outdoors.)**

said second apparatus corresponds to an outdoor unit; and **(See Shea fig. 1; Fig. 1 shows a mobile station receiver that may be located indoors or outdoors.)**

said reference signal corresponds to a signal of a transmission system. **(See Shea col. 4 lines 62-63; A pilot tone signal is used as a reference signal in transmission system.)**

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to STEPHEN J. CLAWSON whose telephone number is (571)270-7498. The examiner can normally be reached on M-F 7:30-5:00 pm est.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on 571-272-3155. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/STEPHEN J. CLAWSON/  
Examiner, Art Unit 2461

/Huy D Vu/

Supervisory Patent Examiner, Art Unit 2461